MULTIMEDIA UNIVERSITY®

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 3, 2021/2022

HPT2021 INTRODUCTION TO HUMAN PATHOLOGY

(All Sections / Groups)

10 AUGUST 2022
9.00 a.m. - 11.00 a.m.
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of **4** pages including cover page with **FOUR** questions only.

2. Attempt **ALL** the questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

QUESTION 1

(a) What do the following prefixes / suffixes mean? [3 marks]

i.	Cardio-	:
ii.	Pneumo-	:
iii.	Cyano-	:
iv.	Rhino-	:
v.	Thrombo-	:
vi.	Gastro-	:
vii.	Myo-	:
viii.	Ophthalmo-	:
ix.	Hemat-	:
x.	–emia	:
xi.	–itis	:
xii.	–pathy	:

(b) What are the factors influencing the outcome of cell injury? Name FOUR. [2 marks]

(c) Apoptosis can be both physiologic and pathologic. Name TWO examples for each type of apoptosis. [2 marks]

(d) There are missing words in the following paragraph. State the right words to fill the blanks, (i) to (vi). [3 marks]

"Blood clotting, or coagulation, is an important process that prevents excessive bleeding when a blood vessel is injured. __(i)__ and proteins in the plasma work together to stop the bleeding by forming a clot over the injury. Typically, our body will naturally __(ii)__ the blood clot after the injury has healed. Sometimes, however, clots form on the inside of vessels without an obvious injury. Clots can occur in veins or arteries. An abnormal clot that forms in a __(iii)__ may restrict the return of blood to the heart and can result in pain and swelling as the blood gathers behind the clot. __(iv)__ is a type of clot that forms in a major vein of the leg or, less commonly, in the arms, pelvis, or other large veins in the body. In some cases, a clot in a vein may __(v)__ from its point of origin and travel through the heart to the lungs where it becomes wedged, preventing adequate blood flow. This is called a __(vi)__ and can be extremely dangerous."

Continued...

QUESTION 2

(a) What does it mean to be opportunistic pathogens? Name TWO examples. [1.5 marks]

(b) During an oral surgery, the surgeon nicked the patient's gum with a sharp instrument. This allowed *Streptococcus*, a bacterium normally present in the mouth, to gain access to the blood. As a result, the patient developed bacterial endocarditis (an infection of the heart). Which type of disease is this? [0.5 mark]

(c) Virulence, the degree to which a pathogen can cause disease, can be quantified by calculating either the infectious dose 50 (ID_{50}) or lethal dose (LD_{50}) of a pathogen on a given population.
Pathogen A has an ID_{50} of 50 particles, pathogen B has an ID_{50} of 1,000 particles, and pathogen C has an ID_{50} of 1×10^6 particles. Which pathogen is the most virulent? Explain your answer. [1 mark]

(d) The chain of infection for diseases transmission is composed of the following:
- etiologic agent,
- reservoir,
- portal of exit,
- method of transmission,
- portal of entry, and
- susceptible host.

Which link in the chain of infection do the following actions break: [2 marks]

i. A nurse places a mask over a patient's mouth and nose because he has tuberculosis.
ii. A nurse administers the DPT vaccination to a child.
iii. A nurse is very careful to avoid sticking himself with a needle in order to prevent getting Hepatitis C.
iv. A public health nurse lobbies & promotes a project to get rid of standing water, in order to reduce the mosquito population.

(e) Is neoplasm the same as cancer? Explain your answer. [1 mark]

(f) For the following tumors, indicate their behavior (benign or malignant) and their cellular origin. [2 marks]
i. Rhabdomyoma
ii. Adenocarcinoma
iii. Leiomyosarcoma
iv. Hemangioma

(g) How do you explain metastasis to a patient? How does it happen? What is essential for tumor metastasis? [2 marks]

Continued...

QUESTION 3

(a) What are the TWO signs of inflammation in toenail? [1 mark]

(b) What are the TWO causes of transudative event during an inflammatory response? [1 mark]

(c) What are the TWO most common causes of chronic inflammation? [1 mark]

(d) Why is inflammation important in the healing process? [1 mark]

(e) Why is extracellular matrix (ECM) deposition important during wound healing? [1 mark]

(f) What are TWO causes of wound dehiscence? [1 mark]

(g) What disease can be caused by vitamin B3 deficiency in children and adult? [0.5 mark]

(h) What is obesity? [1 mark]

(i) What are the THREE conditions of hyperthermia? [1.5 marks]

(j) What happens breathing in methane fumes? Can it be dangerous? [1 mark]

QUESTION 4

(a) What is the differences between an incision and a laceration? [2 marks]

(b) What is aneuploidy XO? [0.5 mark]

(c) What is the process of genomic imprinting? [1 mark]

(d) What are the effects of amniotic band syndrome? [1 mark]

(e) What is opsonization? [1 mark]

(f) Is vaccination an example of innate or adaptive immunity? State the reason of your answer. [1 mark]

(g) How does the innate immune system activate the adaptive immune system? [1 mark]

(h) What causes systemic lupus erythematosus? [1 mark]

(i) Name TWO factors that weakens host defences and makes them more susceptible to infection? [1 mark]

(j) What immune cells recognize MHC 1? [0.5 mark]

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